

Reading Nifty50

using Pandas library for reading CSV file

```
In [1]: import pandas as pd
a = pd.read_csv('ind_niftynext50list.csv')
a.head()
```

```
Out[1]:
```

	Company Name	Symbol
0	ACC Ltd.	ACC
1	Abbott India Ltd.	ABBOTINDIA
2	Adani Enterprises Ltd.	ADANIENT
3	Adani Green Energy Ltd.	ADANIGREEN
4	Adani Transmission Ltd.	ADANITRANS

Data Extrcation

yfinance:Yahoo Finance is a media platform that provides financial news, data about stock quotes, press releases, and financial reports. And all the data provided by Yahoo Finance is free.The python library yfinance offers a temporary fix to the problem by scraping the data from Yahoo! Finance and returning the data in the DataFrame format. So you can still use Yahoo Finance to get free stock market data.

DataFrame (pandas.core.frame) : An efficient 2D container for potentially mixed-type time series or other labeled data series.

```
In [21]: from pandas.core.frame import DataFrame
import yfinance as yf
import pandas as pd

# storing Nifty50 data
a = pd.read_csv('ind_niftynext50list.csv')
Nifty50_list = a
# Extract Data from yfinance by adding ".NS", in Symbol Example : "ACC.NS"
a = (a['Symbol']+'.NS')
# Number of Days for Analysis (Data Collection)
num_days = input("Number of Days(7<= x<20) :")
# creating empty List for stock
stock = []
#creating empty List for DataFrame

DataFrame = []
for i in range(len(a)):
# yf.Ticker : Ticker module to access ticker data
stock.append(yf.Ticker(a[i]))
# history() method for data collection

    DataFrame.append(stock[i].history(num_days+'D'))

# print(DataFrame)
```

Number of Days(7<= x<20) :10

```
In [3]: type(DataFrame)
```

```
Out[3]: list
```

```
In [4]: # adding new Column ,
DataFrame[:,1]['Date'] = DataFrame[:,1].index

DataFrame[:,1]['Date']
```

```
Out[4]: Date
2021-07-08    <built-in method index of list object at 0x000...
2021-07-09    <built-in method index of list object at 0x000...
2021-07-12    <built-in method index of list object at 0x000...
2021-07-13    <built-in method index of list object at 0x000...
2021-07-14    <built-in method index of list object at 0x000...
2021-07-15    <built-in method index of list object at 0x000...
2021-07-16    <built-in method index of list object at 0x000...
```

```

2021-07-19    <built-in method index of list object at 0x000...
2021-07-20    <built-in method index of list object at 0x000...
2021-07-22    <built-in method index of list object at 0x000...
Name: Date, dtype: object

```

Convert Stock Data into DataFrame

using pandas library DataFrame(list)

In [5]:

```
data = pd.DataFrame(DataFrame)
```

C:\Users\lravi\Anaconda\lib\site-packages\pandas\core\internals\construction.py:309: VisibleDeprecationWarning: Creating an ndarray from ragged nested sequences (which is a list-or-tuple of lists-or-tuples-or ndarrays with different lengths or shapes) is deprecated. If you meant to do this, you must specify 'dtype=object' when creating the ndarray
 values = np.array([convert(v) for v in values])

xlsxwriter

XlsxWriter is a Python module that can be used to write text, numbers, formulas and hyperlinks to multiple worksheets in an

Excel 2007+ XLSX file. It supports features such as formatting and 100% compatible Excel XLSX files.

In [6]:

```
import xlsxwriter
```

Adding some more column into DataFrame

Add new column for Date

Pandas to_datetime() method helps to convert string Date time into Python Date time object.

Add Company name as new column

In [7]:

```

for i in range(len(Nifty50_list)):
    data[0][i]['Date'] = data[0][i].index
    data[0][i]['Date'] = pd.to_datetime(data[0][i]['Date'])
    data[0][i]['Company Name'] = f"{Nifty50_list['Company Name'][i]}"

```

Creating Nifty 50 with 50 different .xlsx file

Name of the file "Symbol.xlsx"

writer.save() for saving the file

In [8]:

```

for i in range(len(Nifty50_list)):
    writer = pd.ExcelWriter(f"{Nifty50_list['Symbol'][i]}.xlsx", engine = 'xlsxwriter')
    data[0][i].to_excel(writer, sheet_name='Nifty 50', index = False)
    writer.save()

```

In [9]:

```
Nifty50_list.head()
```

Out[9]:

	Company Name	Symbol
0	ACC Ltd.	ACC
1	Abbott India Ltd.	ABBOTINDIA
2	Adani Enterprises Ltd.	ADANIENT
3	Adani Green Energy Ltd.	ADANIGREEN
4	Adani Transmission Ltd.	ADANITRANS

In [10]:

```

import math as m
import numpy as np

```

Accessing Data

Accessing data using saved file, with file name , here test code next cell have code for with FOR LOOP

Using pandas library for access the .xlsx file (pd.read_excel())

```
In [11]: ACC_data = pd.read_excel('ACC.xlsx')
ACC_data
```

```
Out[11]:
```

	Open	High	Low	Close	Volume	Dividends	Stock Splits	Date	Company Name
0	2041.000000	2057.350098	2022.000000	2029.500000	342553	0	0	2021-07-08	ACC Ltd.
1	2029.500000	2040.000000	2017.099976	2037.250000	174442	0	0	2021-07-09	ACC Ltd.
2	2042.500000	2087.000000	2042.500000	2072.300049	770557	0	0	2021-07-12	ACC Ltd.
3	2082.000000	2091.699951	2070.500000	2084.800049	420437	0	0	2021-07-13	ACC Ltd.
4	2083.649902	2097.949951	2070.899902	2081.550049	363780	0	0	2021-07-14	ACC Ltd.
5	2080.000000	2125.100098	2068.699951	2112.449951	710905	0	0	2021-07-15	ACC Ltd.
6	2122.449951	2135.000000	2112.000000	2129.350098	425910	0	0	2021-07-16	ACC Ltd.
7	2117.899902	2168.000000	2105.199951	2151.899902	666887	0	0	2021-07-19	ACC Ltd.
8	2226.000000	2344.050049	2192.199951	2308.850098	8593295	0	0	2021-07-20	ACC Ltd.
9	2340.000000	2340.000000	2271.100098	2290.050049	1003385	0	0	2021-07-22	ACC Ltd.

Code for Doji pattern

Implementation On ACC stock

It's hard coded Ratio of Candle Body to (Candle Body + Candle Tail) = 0.1

```
In [12]: l = len(ACC_data)
for i in range(l - 5, l, 1):
#     print(ACC_data['Open'][i])
    if 100*np.absolute((ACC_data['Open'][i] - ACC_data['Close'][i])/((ACC_data['High'][i]-ACC_data['Low'][i])/2 ))
        print(f"Yes , we found it {ACC_data['Date'][i]} and {ACC_data['Company Name'][i]}")
```

Finding Doji Pattern

in 50s Stock from last 6 days for every stocks using these Values as default for this project

```
In [13]: Pattern_data = []
for i in range(len(Nifty50_list)):
    Pattern_data.append(pd.read_excel(f"{Nifty50_list['Symbol'][i]}.xlsx"))
    l = len(Pattern_data[i])
    for j in range(l-6, l, 1):
        if 100*np.absolute((Pattern_data[i]['Open'][j] - Pattern_data[i]['Close'][j])/((Pattern_data[i]['High'][j]-Pattern_data[i]['Low'][j])/2 ))
            print(f"Yes , we found it {Pattern_data[i]['Date'][j]} and {Nifty50_list['Symbol'][i]}")
```

Yes , we found it 2021-07-20 00:00:00 and ADANITRANS

Yes , we found it 2021-07-14 00:00:00 and YESBANK

Spinning Top

All these code are hard coded, condition are not flexible right now.

If you had, idea about stock market you will defiently got code concept

```
In [14]: for i in range(len(Nifty50_list)):
    l = len(Pattern_data[i])
    for j in range(l-6, l, 1):
        avg = (Pattern_data[i]['Open'][j] + Pattern_data[i]['Close'][j])/2
        if 100*np.absolute((Pattern_data[i]['Open'][j] - Pattern_data[i]['Close'][j])/avg) <= .1 :

            candle_tail_len = np.absolute(Pattern_data[i]['High'][j]-Pattern_data[i]['Low'][j])
```

```

candle_tail_avg = np.absolute(Pattern_data[i]['High'][j] + Pattern_data[i]['Low'][j])/2
if np.absolute(avg - candle_tail_avg) < 0.15*candle_tail_len:
    print(f'Yes , we found spinning Top pattern at {Pattern_data[i]['Date'][j]} in the {Nifty50_list['

```

```

Yes , we found spinning Top pattern at 2021-07-14 00:00:00 in the ABBOTINDIA
Yes , we found spinning Top pattern at 2021-07-14 00:00:00 in the BANDHANBNK
Yes , we found spinning Top pattern at 2021-07-22 00:00:00 in the BOSCHLTD
Yes , we found spinning Top pattern at 2021-07-16 00:00:00 in the HINDPETRO
Yes , we found spinning Top pattern at 2021-07-22 00:00:00 in the HINDPETRO
Yes , we found spinning Top pattern at 2021-07-14 00:00:00 in the MARICO
Yes , we found spinning Top pattern at 2021-07-15 00:00:00 in the NMDC
Yes , we found spinning Top pattern at 2021-07-22 00:00:00 in the PETRONET

```

Marubozu Pattern Code

In [15]:

```

for i in range(len(Nifty50_list)):
    l = len(Pattern_data[i])
    for j in range(1-6,l,1):
        candle_tail_len = np.absolute(Pattern_data[i]['High'][j]-Pattern_data[i]['Low'][j])
        candle_Body_len = np.absolute(Pattern_data[i]['Open'][j]-Pattern_data[i]['Close'][j])
        # print(Pattern_data[i]['Date'][j],candle_tail_len,candle_Body_len,b['Symbol'][i])
        if 100*(candle_Body_len /candle_tail_len )>=91:
            print(f'Yes , we found Marubozu pattern at {Pattern_data[i]['Date'][j]} in the {Nifty50_list['Symbol'

```

```

Yes , we found Marubozu pattern at 2021-07-14 00:00:00 in the ADANIENIT
Yes , we found Marubozu pattern at 2021-07-22 00:00:00 in the ADANITRANS
Yes , we found Marubozu pattern at 2021-07-22 00:00:00 in the COLPAL
Yes , we found Marubozu pattern at 2021-07-20 00:00:00 in the INDUSTOWER
Yes , we found Marubozu pattern at 2021-07-15 00:00:00 in the JUBLFOOD
Yes , we found Marubozu pattern at 2021-07-22 00:00:00 in the MCDOWELL-N

```

Paper Umbrella Code

In [16]:

```

for i in range(len(Nifty50_list)):
    l = len(Pattern_data[i])
    for j in range(1-6,l,1):
        candle_tail_len = np.absolute(Pattern_data[i]['High'][j]-Pattern_data[i]['Low'][j])
        candle_Body_len = np.absolute(Pattern_data[i]['Open'][j]-Pattern_data[i]['Close'][j])
        if candle_tail_len > 2*candle_Body_len:
            avg_Body =(Pattern_data[i]['Open'][j] + Pattern_data[i]['Close'][j])/2
            avg_tail = (Pattern_data[i]['High'][j]-Pattern_data[i]['Low'][j])/2

            if Pattern_data[i]['High'][j]< Pattern_data[i]['Close'][j] + 0.2*avg_tail:
                # if (avg_Body/avg_tail)>10:
                print(f'Yes , we found Paper Umbrella pattern at {Pattern_data[i]['Date'][j]} in the {Nifty50_list

```

```

Yes , we found Paper Umbrella pattern at 2021-07-20 00:00:00 in the ABBOTINDIA
Yes , we found Paper Umbrella pattern at 2021-07-22 00:00:00 in the AUROPHARMA
Yes , we found Paper Umbrella pattern at 2021-07-15 00:00:00 in the BIOCON
Yes , we found Paper Umbrella pattern at 2021-07-22 00:00:00 in the INDIGO
Yes , we found Paper Umbrella pattern at 2021-07-22 00:00:00 in the LUPIN
Yes , we found Paper Umbrella pattern at 2021-07-16 00:00:00 in the SBICARD
Yes , we found Paper Umbrella pattern at 2021-07-14 00:00:00 in the YESBANK

```

Shooting Star Code

In [17]:

```

for i in range(len(Nifty50_list)):
    l = len(Pattern_data[i])
    for j in range(1-6,l,1):
        candle_tail_len = np.absolute(Pattern_data[i]['High'][j]-Pattern_data[i]['Low'][j])
        candle_Body_len = np.absolute(Pattern_data[i]['Open'][j]-Pattern_data[i]['Close'][j])
        if candle_tail_len > 2*candle_Body_len:
            avg_Body =(Pattern_data[i]['Open'][j] + Pattern_data[i]['Close'][j])/2
            avg_tail = (Pattern_data[i]['High'][j]-Pattern_data[i]['Low'][j])/2
            if Pattern_data[i]['Low'][j] + 0.2*avg_tail>Pattern_data[i]['Close'][j] :

                print(f'Yes , we found Shooting Star pattern at {Pattern_data[i]['Date'][j]} in the {Nifty50_list

```

```

Yes , we found Shooting Star pattern at 2021-07-20 00:00:00 in the ADANITRANS
Yes , we found Shooting Star pattern at 2021-07-14 00:00:00 in the ALKEM

```

Yes , we found Shooting Star pattern at 2021-07-16 00:00:00 in the ALKEM
 Yes , we found Shooting Star pattern at 2021-07-19 00:00:00 in the BAJAJHLDNG
 Yes , we found Shooting Star pattern at 2021-07-14 00:00:00 in the PETRONET
 Yes , we found Shooting Star pattern at 2021-07-15 00:00:00 in the PEL
 Yes , we found Shooting Star pattern at 2021-07-22 00:00:00 in the YESBANK

Harami Pattern

Bullish Harami Pattern Code

```
In [18]:
for i in range(len(Nifty50_list)):
    l = len(Pattern_data[i])
    for j in range(l-6,l-1,1):
        avg_Body =(Pattern_data[i]['Open'][j] + Pattern_data[i]['Close'][j])/2
        candle_tail_len = np.absolute(Pattern_data[i]['High'][j]-Pattern_data[i]['Low'][j])
        candle_Body_len = np.absolute(Pattern_data[i]['Open'][j]-Pattern_data[i]['Close'][j])
        if (Pattern_data[i]['Open'][j]-Pattern_data[i]['Close'][j])>0:
            next_Body_len = Pattern_data[i]['Close'][j+1] - Pattern_data[i]['Open'][j+1]

        if (next_Body_len >0) and candle_Body_len > 3*next_Body_len and Pattern_data[i]['Open'][j+1]>Pattern_data[i]['Close'][j]:
            print(f"Yes , we found Bullish Harami pattern at {Pattern_data[i]['Date'][j]} in the {Nifty50_list[i]}")
```

Yes , we found Bullish Harami pattern at 2021-07-20 00:00:00 in the DLF
 Yes , we found Bullish Harami pattern at 2021-07-15 00:00:00 in the HINDPETRO
 Yes , we found Bullish Harami pattern at 2021-07-15 00:00:00 in the ICICIPRULI
 Yes , we found Bullish Harami pattern at 2021-07-20 00:00:00 in the LUPIN
 Yes , we found Bullish Harami pattern at 2021-07-14 00:00:00 in the MCDOWELL-N
 Yes , we found Bullish Harami pattern at 2021-07-20 00:00:00 in the VEDL

Bearish Harami Pattern code

```
In [20]:
for i in range(len(Nifty50_list)):
    l = len(Pattern_data[i])
    for j in range(l-6,l-1,1):
        avg_Body =(Pattern_data[i]['Open'][j] + Pattern_data[i]['Close'][j])/2
        candle_tail_len = np.absolute(Pattern_data[i]['High'][j]-Pattern_data[i]['Low'][j])
        candle_Body_len = np.absolute(Pattern_data[i]['Open'][j]-Pattern_data[i]['Close'][j])
        if (Pattern_data[i]['Close'][j] - Pattern_data[i]['Open'][j])>0:
            next_Body_len = Pattern_data[i]['Open'][j+1] - Pattern_data[i]['Close'][j+1]
            if next_Body_len >0 and candle_Body_len > 3*next_Body_len and Pattern_data[i]['Close'][j]>Pattern_data[i]['Open'][j+1]:
                print(f"Yes , we found Beraish Harami pattern at {Pattern_data[i]['Date'][j]} in the {Nifty50_list[i]}")
```

Yes , we found Beraish Harami pattern at 2021-07-16 00:00:00 in the AUROPHARMA
 Yes , we found Beraish Harami pattern at 2021-07-16 00:00:00 in the GLAND
 Yes , we found Beraish Harami pattern at 2021-07-20 00:00:00 in the HINDPETRO
 Yes , we found Beraish Harami pattern at 2021-07-16 00:00:00 in the MCDOWELL-N

Thank You